

ART 3 AMENDT

Claims

1. Device for guiding an endless web (10),

in which the endless web (10) is guided via a first roll (24) directly to an additional roll (26) with a predetermined wrap angle to each roll, the shafts (66) of said rolls lying parallel to one another in a plane and being held by a frame (28),

the web (10) being fed to and led away from the rolls (24, 26) held by the frame (28) via a stationary first roll (W2) and an additional stationary roll (W1),

the frame (28) being pivotable relative to the stationary rolls (W1, W2), about a first axis of rotation (30) essentially perpendicular to the plane, in order to modify the position of the edge (11, 13) of the web (10) in the direction of the roll shafts (66),

and in which the frame (28) can be pivoted relative to the stationary rolls (W1, W2) in a second axis of rotation (58), one component of the pivoting motion running parallel to the direction of movement of the web (10) between the two rolls (24, 26).

2. Device according to Claim 1, in which a respective transport roll (20, 36) is situated before the frame (28) and after the frame (28), and said rolls feed the web (10) in and lead it away.

3. Device according to Claim 1 or 2, in which the frame (28) can be displaced in the second axis of rotation (58) with the aid of an adjustment device that can be actuated manually, electrically, hydraulically, and/or pneumatically.

4. Device according to one of the preceding Claims 1 to 3, in which a screw-nut combination (64) is used for the displacement.

5. Device according to one of the preceding claims, in which along the web (10) there is situated at least one sensor (S1, S2, S3, S4, S5, S6) that acquires a sagging at one side of the web (10) and indicates it via a control device,

and in which, dependent on the display, the second axis of rotation (58) is pivoted.

6. Device according to one of the preceding claims, in which along the web (10) there is situated at least one sensor (S1, S2, S3, S4, S5, S6) whose signal is dependent on the sagging of one side of the web,

and in which the signal is supplied to a control circuit that pivots the frame (28) in the second axis of rotation (58) in such a way that the one-sided sagging of the web (10) is reduced or is controlled to the value zero.

7. Device according to Claim 6, in which a sensor (S1, S2; S3, S4) is situated in the vicinity of the frame (28) at both sides of the web (10).

8. Device according to one of the preceding claims, in which as a sensor (S1, S2) a force sensor is used that acquires the web tension.

9. Device according to Claim 8, in which the sensor (S1, S2) acquires the force that is exerted at one side at the feed-in roll (20) via which the web (10) is fed in to the frame (28).

10. Device according to one of the preceding claims, in which the distribution of the tension of the web (10) in the area between the two rolls (24, 26) of the frame (28) is acquired by sensors (S3, S4) as a one-sided sagging or as a wave.

11. Device according to one of the preceding claims, in which, seen in the direction of the web transport, a fixing station (46) that fixes a toner image is situated after a transfer station.

12. Device according to Claim 11, in which, seen in the direction of the web transport, after the fixing station (46) there is situated a draw-off device (48) for the web (10) that can be pivoted in order to correct a one-sided sagging of the web (10).
13. Device according to one of the preceding Claims 11 or 12, in which the web tension in the area of the fixing station (46) for fixing a toner image on the web (10) is acquired by at least one sensor (S5, S6), and the pivoting of the draw-off device (48) takes place dependent on the signal of the sensor (S5, S6).
14. Device according to Claim 13, in which the draw-off device (48) contains two rolls (49, 50) that can be pivoted about an axis of rotation (52).
15. Device according to Claim 14, in which the axis of rotation (52) runs essentially perpendicular to the web (10).
16. Device according to one of the preceding claims, in which the sensors (S3, S4) on the rotating frame (22) as well as the sensors (S5, S6) in the area of the fixing station (46) monitor the web (10),
and in which a control unit (80) pivots the rotating frame (22) about the axis of rotation (58) dependent on the signals from the sensors (S3, S4),
and in which the control unit (80) pivots the draw-off device (48) about the axis of rotation (52) dependent on the signals from the sensors (S5, S6).
17. Device according to one of the preceding claims, in which the sensors (S1, S2) in the area of the draw-in roll (20) and the sensors (S5, S6) in the area of the fixing station (46) monitor the web (10),
and in which a control unit (80) pivots the rotating frame (22) about the axis of rotation (58) dependent on the signals from the sensors (S1, S2), and pivots the draw-off device (48) about the

axis of rotation (52) dependent on the signals from the sensors (S5, S6).

18. Device according to one of the preceding claims, in which only the sensors (S1, S2) in the area of the draw-in roll (20) acquire the web (10),
and in which a control unit (80) rotates the rotating frame (22) about the axis (58) and rotates the draw-off device (48) about the axis of rotation (52), dependent on the signals from the sensors (S1, S2).

19. Device according to one of the preceding claims, in which the endless web (10) is fashioned as a paper web without edge perforation.

20. Device according to one of the preceding claims, characterized in that it is used in a printer or copier.

21. Device for guiding an endless web in a printer or copier,

in which, after the application of a smudgeable toner image in a transfer station (38, 40), the endless web (10) is supplied to a fixing station (46) for the fixing of the toner images,

and in which after the fixing station (46), seen in the direction of transport of the web, there is situated a draw-off device (48) that draws off the web (10) from the transfer station in freely suspended fashion with a predetermined tensile force,

and in which the draw-off device (48) can be pivoted in order to correct a one-sided sagging of the web (10).

22. Device according to Claim 21, in which the draw-off device (40) contains two rolls (49, 50) that can be pivoted about an axis of rotation (52).

23. Device according to Claim 22, in which the axis of rotation (52) runs essentially perpendicular to the web (10).

24. Device according to one of the preceding claims, in which the web tension in the area of the fixing station (46) is acquired by at least one sensor (S5, S6), the pivoting of the draw-off device (40) taking place dependent on the signal of the sensor (S5, S6).

25. Device according to one of the preceding claims, in which the fixing station (46) operates in contactless fashion, preferably by means of infrared radiation.

26. Method for guiding an endless web (10),
in which the endless web (10) is guided via a first roll (24) directly to an additional roll (26) with a predetermined angle of wrap to each roll, the shafts (26) of the rolls lying parallel to one another in a plane and being held by a frame (28),
the web (10) being fed to and led away from the rolls (24, 26) held by the frame (28) via a stationary first roll (W2) and an additional stationary roll (W1),
the frame (28) being pivoted relative to the stationary rolls (W1, W2) about a first axis of rotation (30) essentially perpendicular to the plane, in order to modify the position of the edge (11, 13) of the web (10) in the direction of the roll shafts (66),
and in which the frame (28) is pivoted relative to the stationary rolls (W1, W2) in a second axis of rotation (58), one component of the pivoting motion running parallel to the direction of movement of the web (10) between the two rolls (24, 26).

27. Method according to Claim 26, in which at least one sensor (S1, S2, S3, S4, S5, S6) is situated along the web (10) whose signal is dependent on the sagging of one side of the web,

and in which the signal is supplied to a control circuit that pivots the frame (28) in the second axis of rotation (58) in such a way that the one-sided sagging of the web (10) is reduced or is controlled to the value zero.

28. Method according to Claim 26 or 27, in which, seen in the direction of the transport of the web, there is situated after the fixing station (46) a draw-off device (48) for the web (10) that pivots in order to correct a one-sided sagging of the web (10).

29. Method for guiding an endless web in a printer or copier,

in which after the application of a smudgeable toner image in a transfer printing station (38, 40), the endless web (10) is supplied to a fixing station (46) for the fixing of the toner images,

and in which, seen in the direction of transport of the web, there is situated after the fixing station (46) a draw-off device (40) that draws off the web (10) from the transfer printing station in freely suspended fashion with a predetermined tensile force,

and in which the draw-off device (40) can be pivoted in order to correct a one-sided sagging of the web (10).

30. Method according to Claim 29, in which the web tension in the area of the fixing station (46) is acquired by at least one sensor (S5, S6), the pivoting of the draw-off device (48) taking place dependent on the signal from the sensor (S5, S6).

31. Method according to one of the preceding claims, in which the fixing station (46) operates in contactless fashion, preferably by means of infrared radiation.